

## **FLASH MEMORY SYSTEM STARTUP OPERATION**

### **ABSTRACT OF THE DISCLOSURE**

Multiple copies of firmware code for controlling operation of a non-volatile flash memory system are stored at different suitable locations of the flash memory of a memory system. A map of addresses of these locations is also stored in the flash memory. Upon initialization of the memory system, boot code stored in the memory controller is executed by its microprocessor to reference the address map and load one copy of the firmware from the flash memory into a controller memory, from which it may then be executed by the microprocessor to operate the memory system to store and retrieve user data. An error correction code (ECC) is used to check the data but the best portions of the two or more firmware copies stored in the flash memory are used to reduce the need to use ECC. The firmware code may be stored in the flash memory in two-states when user data is stored in the same memory in more than two-states.